

CLAIMS

1. Nozzle for spraying liquid substances, dispersions, emulsions, or suspensions, especially highly viscous media, especially from the food and chemical
5 industries for use in fluidized-bed granulating systems, comprising the following:

- the nozzle includes a cylindrical nozzle body and a nozzle mouth piece,
 - the nozzle body includes a centrally arranged inner tube and an outer tube spaced apart from the inner tube,
 - 10 - the inner tube is connected to a supply for a substance to be sprayed,
 - the outer tube is connected to a supply for an atomizing gas or to a carrier-gas stream and forms a lance base in a bottom region,
- characterized in that the inner tube (3) is mounted in a receiving block (11), which is detachably attached in a tube (10) arranged in a fixed manner on a
15 lower region of the lance base (9) and which can be removed from the tube with the inner tube (3) and add-on parts (6) possibly attached to the inner tube, and an attachment device (8), which connects the nozzle detachably to a processing housing (15) of the fluidized-bed granulating system, is arranged at a lower region of the outer tube (2).

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2. Nozzle according to Claim 1, characterized in that a seal (14) is arranged within the lance body (9) between the receiving block (11) and the inner tube (3).

25 3. Nozzle according to Claim 1 and 2, characterized in that a seal (16) is arranged between the outer tube (2) and the attachment device (8), as well as between the processing housing (15) and the attachment device (8).

4. Nozzle according to Claim 1 to 3, characterized in that in a region of the mouth piece (1) of the nozzle, the inner tube (3) is exchangeably connected to a liquid insert (4) using a metal seal set (5).

5 5. Nozzle according to Claim 1 to 4, characterized in that in the region of the nozzle mouth piece (1), an add-on part (6) in the form of swirl bodies, swirl vanes, or the like for guiding compressed air and for guiding the inner tube (3) is arranged in an annular gap between the outer tube (2) and the liquid insert (4) or the inner tube (3) and is rigidly connected to the liquid insert (4)
10 or to the outer tube (2).

6. Nozzle according to Claim 1 to 5, characterized in that attachment of the nozzle on the process housing (15) is realized using a milk-tube union nut (7) or a tri-clamp attachment.

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7. Nozzle according to Claim 1 to 6, characterized in that the outer tube (2) is detachably connected, for example, by a tri-clamp attachment (13), to the lance base (9).

20 8. Nozzle according to Claim 1 to 7, characterized in that the outer tube (3) is provided in a region of connection to the lance base (9) with an expanding diameter.

9. Nozzle according to Claim 1 to 8, characterized in that the receiving block
25 (11) is connected to the tube (10) by a detachable connection, for example, a tri-clamp attachment (12).

10. Nozzle according to Claim 1 to 9, characterized in that the inner tube (3) can be screwed into the receiving block (11) adjustable in a longitudinal axis
30 direction for setting a spraying angle and a spraying pattern, wherein the

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seal (14) is provided for equalizing an adjustment path and comprises a metal compensator or an elastic O-ring.

11. Nozzle according to Claim 1 to 9, characterized in that the inner tube (3)
5 is welded to the receiving block (11).